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The intelligence community's response to the mushroom growth of Soviet technical literature is impressive in its coordination and thoroughness.

THE EXPLOITATION OF RUSSIAN SCIENTIFIC LITERATURE FOR INTELLIGENCE PURPOSES

J. J. Bagnall

Russian scientific literature has been an object of the intelligence community's attention for the past ten years and more. Even before the end of World War II, US intelligence had assigned some priority to the examination of Soviet documents. Army intelligence had established its Special Documents Section to collect information on the USSR from captured documents in both the Russian and German languages. Although not abundant in these sources, a good deal of information on Soviet military technical developments was ferreted out. The Washington Document Center, jointly operated by the Army and Navy, similarly searched captured Japanese documents for Russian scientific and technical developments.

Development of the Program

As the examination of captured documents passed its peak of usefulness, when it no longer filled the need for information on current scientific developments in the USSR, the CIA components which had taken over this wartime activity turned to current Soviet scientific and technical literature. They did not find such a wealth of information as has now become available, but still a surprising amount on scientific research in progress, if virtually nothing on its technical application. As the number of journals was small and procurement rather erratic because of Soviet censorship, it was decided to abstract all articles and then translate in full certain ones needed by the community. This procedure, begun in August 1947, continued for almost nine years to April 1956.

Between 1952 and 1954 the Soviets began to release more scientific literature; whereas in 1952 only 87 journals were

available, by 1954 there were 165. The Air Force, taking note of this and desiring to have as much of the literature abstracted as possible, set up with CIA a joint program for abstracting cover-to-cover 58 selected journals of prime intelligence interest. This program also continued until April 1956.

By this time the number of scientific journals released by the Soviet Union had increased to 328, and the intelligence community took a closer and harder look at the increasing amount of material available. Information was beginning to appear on Soviet research and development in, or related to, the fields of atomic energy, guided missiles, electronics, automation and ABC warfare. There were now far more than 58 journals of prime interest. There was no question of the value of the information to intelligence; the problem was how best to handle it in order to serve the varying needs and analytical facilities of the several agencies.

Two separate methods evolved. The Air Force felt a compelling need to continue and expand a cover-to-cover abstracting program, and therefore proceeded on its own to increase the abstracts coverage gradually, more than doubling the number of journals regarded as of major departmental interest.

Other members of the community, lacking the facilities to sort and maintain files for tens of thousands of abstract cards per year, wanted a screening process performed. Accordingly, in April 1956, CIA began issuing twice a month, as a service of common concern, a digest of information. This sizable report sought to cover the entire range of Soviet Bloc scientific literature, sifting out all research reports of high intelligence priority and also providing news-type items about personnel, organizations and activities in all scientific fields.

Although these efforts have focused on scientific journals as the best source of current information, books have not been overlooked. In 1953 the Air Force began the abstracting of Russian scientific books received in the Library of Congress and continues this program today.

The Current Effort

The foregoing historical sketch has traced the growth of interest and activity on the part of US intelligence in the exploitation of Soviet scientific literature, providing a background for correction of the misleading and erroneous publicity in the

US press on the subject following the advent of Sputnik. How does the picture look today, and how is intelligence being provided with information from this source?

Russian literature of scientific interest is available today in approximately 325 journals specifically devoted to scientific fields, another 75 partially occupied with items of scientific concern, and about 80 additional periodicals of a bibliographic nature in the scientific and technical fields. Of books and monographs there are approximately 3,000 per year available. In addition, two newspapers devote regular coverage to fields of science and technology.

The Air Force is abstracting all articles in 137 of the journals. These abstracts are issued in card form and disseminated to the intelligence community. The Air Force also prepares reviews of books received and available in the Library of Congress. Meanwhile, CIA is producing two digests in the scientific field. One, entitled *Scientific Information Report,* has the objective of providing condensed information, whether in summary, extract or abstract form, on subjects of highest priority interest to intelligence. This report, issued twice monthly, is the product of a complete screening of all Soviet scientific periodicals. The other CIA digest is a compilation of items on International Geophysical Year activities. Because of the sensitivity of intelligence interest in IGY information, the report is issued under Commerce Department cover.

These operations carried on within the intelligence community are specifically designed to serve intelligence purposes. However, some activities not so designed, and carried on outside the intelligence community, also produce information which can serve intelligence needs. The intelligence operations described above were therefore developed with cognizance of these others and with a view to making maximum use of them and avoiding duplication.

For bibliographic and indexing service there is first the Library of Congress' *Monthly Index of Russian Accessions* (MIRA). This publication gives the titles of all articles and books received. It is the bibliographic guide to all Soviet literature, including scientific and technical items. In addition, two other libraries—the National Library of Medicine and the Agriculture Library—issue bibliographies which include the

Russian literature in their respective fields; they overlap with the MIRA listings. All three publications are widely available.

There are also several specialized indexes. One in the Agriculture Department Library covers the field of veterinary medicine. This is in card files and not disseminated. Another, in CIA, indexes in card-file form information from Soviet literature on scientific institutions in the USSR. In addition, the abstracting services cited below usually provide indexes to the literature they have abstracted.

Abstracting is the most popular approach to scientific literature, and there are numerous professional abstracting societies. Among the best known are Chemical Abstracts, Excerpta Medica and Biological Abstracts. These professional organizations publish abstracts each in its own field, usually with a lag of six to eighteen months from the publication date of the original source material. In addition, the Joint Publications Research Service has begun issuing translations of the abstracts produced by the Soviets themselves and published in their abstract journal *Referativnyy Zhurnal.* These are abstracts of their own literature. The three series being translated are chemistry, physics and biology.

With respect to translation, a rather extensive program of cover-to-cover translation covering some 30 to 40 journals is sponsored by the National Science Foundation and the National Institutes of Health, and this is supplemented by work undertaken by commercial translating agencies. Translation of specific articles is sponsored by a wide range of agencies and organizations, and a complete monthly listing is issued by CIA in its *Consolidated Translation Survey.*

In summary, now, what does intelligence have as a result of this program? First, it has a complete listing and index of the titles of all Soviet books and journal articles received in this country. Second, it has a digest of all journal information on research related to the high priority objectives of atomic energy, guided missiles, ABC warfare and electronics, as well as all news about Soviet scientific organizations, personalities and activities. Third, it has a review of each book or monograph on a scientific or technical subject. Fourth, it has rather prompt abstracts of all articles in the most important journals. Fifth, it has abstracts excellently prepared by the

Soviets themselves on their own research in the fields of chemistry, biology, and physics. Sixth, it has a fairly large volume of translations of individual articles selected on the basis of particular interest. At longer range there are available abstracts prepared by the professional societies in their subject fields, as well as cover-to-cover journal translations and collations of material in special subject categories.

Intelligence then has available for analysis and evaluation a broad selection of the important information on Soviet science obtainable from the literature. It does not, of course, have an abstract of every article nor a translation of every article. But that is hardly necessary or even advisable. Translating every piece of scientific literature put out by the USSR would fill an estimated 1,500,000 pages per year at a cost of over six million dollars, provided a sufficient number of linguists could be found to do the job. The analytic handling of such an indiscriminate mass of material would be next to impossible.

What we need and what we now have is a good alerting and screening mechanism for the exploitation of Russian scientific literature. This does not mean that every little kink has been worked out of the system nor that the intelligence community will sit back in complacency. At the moment, for example, investigations are being conducted on the feasibility of obtaining data on the guided missile industry in the Soviet Union by collation of fragmentary bits of information scattered through the literature in not obviously related fields. In its coordinated attack on these problems, the community will continue to monitor, through its interdepartmental Committee on Exploitation of Foreign Language Publications, changes in Soviet practices in releasing information through open literature, indeed trying to anticipate them, and accordingly will take joint action to revise as necessary the system of exploitation or its procedures.